

EXECUTIVE SUMMARY

CBG Communications, Inc. (CBG) was selected by the Washington Utilities and Transportation Commission (UTC) to conduct a Broadband Study to evaluate broadband availability, adoption, and use in five Washington Counties – Columbia, Ferry, Grays Harbor, Lewis and Stevens (the “five counties” or “subject counties”). The Broadband Study traces its roots to Section 149 of the 2007-09 Omnibus Operating Budget. That budget proviso specifically directed the Utilities and Transportation Commission:

to conduct a survey to identify factors preventing the widespread availability and use of broadband technologies. The survey must collect and interpret reliable geographic, demographic, cultural, and telecommunications technology information to identify broadband disparities in the state. The commission shall consult appropriate stakeholders in designing the survey.¹

CBG was engaged by the UTC to assist it in meeting the Legislature’s directive by employing a variety of survey and other research methodologies to identify factors affecting broadband availability, deployment and consumer utilization disparities.

Broadband service (also known as high-speed Internet access) allows residential and business consumers to access the Internet and Internet-related applications and services at significantly higher speeds than those typically available through “dial-up” Internet access services. Until recently, the Federal Communications Commission (FCC) defined broadband service as data transmission speeds exceeding 200 kilobits per second (Kbps), in at least one direction: downstream (from the Internet to a computer) or upstream (from a computer to the Internet). In March of 2008, the FCC further defined broadband by distinguishing several classes of broadband service. First generation broadband continues to be defined as 200 Kbps. From there, the FCC has established seven additional tiers of broadband service with the highest tier

¹ SHB 1128, Sec. 149(3).

reflecting any broadband service offering having a transmission speed of 100 Mbps or more. The United States Department of Agriculture - Rural Utilities Service' (RUS), which provides federal loan assistance to telecommunications carriers deploying broadband services, requires loan recipients to offer a minimum of 200 Kbps in each direction. The stakeholders that were consulted during the design of the survey suggested that 1.5 Mbps downstream and upstream was seen by many as constituting broadband service. Because of the limited availability of broadband services in the five counties studied, CBG has reviewed and reports herein on various levels of broadband service offerings and capabilities.

The Broadband Study was designed to achieve four key objectives:

- **Identify broadband availability**, including infrastructure and service offerings within the five counties,
- **Evaluate broadband adoption and use**, including its importance and value to residents, businesses, and other constituent groups,
- **Identify various means to enhance broadband deployment** and analyze their potential for assisting economic development or enhancing quality of life, and
- **Provide a research template** that could potentially be used for follow-on research.

CBG employed a number of information gathering methodologies and related activities as part of the Broadband Study in order to meet the project's objectives. These methodologies and activities included:

- **Review of background information** including, but not limited to, documents prepared by broadband and technology work groups within the subject counties and prior telecommunications, economic development, and broadband studies conducted within the subject counties and other regions of Washington.
- A random, statistically valid **survey of the residential community** within each of the five counties.

- A sectorized, random telephone **survey of business and nonprofit entities** within each of the five counties, augmented by an online survey disseminated through local chambers of commerce.
- Online and written **surveys of other organizations and communities of interest**, including local governments, tribal nations, library districts and educational institutions.
- **In-depth interviews and focused discussions with key communities of interest representatives** within the five counties, as well as in-depth interviews with key staff and elected officials representing statewide interests.
- A written **broadband providers survey**, supplemented by review of provider-generated marketing materials, interviews with service provider representatives, and a 2,700 mile ride-out and review of physical infrastructure within the five counties.
- Subsequent to the information gathering stage, CBG conducted **a variety of analyses of the underlying information** to reliably interpret and make informed conclusions about the data. This stage of the Broadband Study included:
 - An economic impact analysis.
 - A digital divide analysis.
 - A comparative analysis, including an assessment of best practices.
 - A broadband infrastructure and service analysis.
 - A gap analysis.
 - A future requirements analysis.

After three months, several thousand miles and more than 2000 interviews, CBG is pleased to offer the following principal conclusions regarding factors affecting the deployment, availability and use of broadband services in the five counties subject to the Broadband Study:

- **Broadband availability varies widely within each county and across the counties.**

Seventy-two percent (72%) of residents in the studied counties have Internet access, but just 32% have wireline broadband and in some counties like Ferry, just 15% of residents have wireline broadband. Nationally, 54% of residents have broadband. Generally, the higher the population density, the closer the proximity to other dense areas and the closer the proximity to major transportation corridors, the higher the availability of broadband service including the likelihood of multiple options. For example, counties with more broadband access, like Grays Harbor, had a stronger presence of thriving small and medium businesses, as well as a larger percentage of households operating a home-based business.

Type of Internet Access Connection	Columbia	Ferry	Grays Harbor	Lewis	Stevens	Average Across the Five Counties
Dial-Up	17%	35%	11%	25%	34%	24%
DSL (Digital Subscriber Line)	31%	7%	17%	27%	19%	20%
Cable Modem	7%	8%	33%	9%	5%	12%
Satellite Internet Service	7%	12%	3%	3%	10%	7%
No Internet Access	29%	30%	28%	27%	23%	28%

This chart reflects the top reported types of internet connections in the studied counties.

- **Major inhibitors to broadband availability are:**

- low population density,
- distance from a major transportation corridor,
- mountainous and heavily forested terrain,
- permitting delays and problems,
- providers not being included in the community planning process,
- longer than acceptable Return on Investment, and

- limitations of existing technology.
- Even if a high percentage of the population wanted to subscribe to broadband, **in many rural areas there is simply not sufficient demand (i.e., revenue potential) for the service to justify the level of private investment needed for deployment.** This remains a hard reality without either technological changes that reduce costs substantially or substantial subsidies from government or foundation sources, like the mechanisms used historically to promote the universal availability of wireline telephone service.
- Generally, **broadband adoption follows availability.** Where broadband availability and options are plentiful, consumer use of broadband service and the value of such use expands significantly. The study suggests a couple of important exceptions to this general conclusion. In rural areas served by broadband, subscription rates to high speed internet services are generally lower than in urban pockets. Research suggests that this is because the perceived value of high speed internet access is not always readily seen by rural residents. There is clearly a segment of residential consumers that do not want or require broadband service or access to the Internet, even if it is available. However, it is equally evident that a certain percentage of residential consumers would embrace broadband service but they would need enhanced access to computing devices and/or training to really understand and take advantage of the opportunity offered by broadband.
- There are several key **inhibitors to broadband adoption and use** that coalesce around the price/value relationship of broadband service access. These include:
 - Service not available or not easily available.
 - Relatively high cost of service.
 - Lack of viable, multiple competing options.
- **“It takes good, forward thinking people,”** Grays Harbor Chamber Focus Group participant.

Overall, champions will be needed to pursue broader deployment and adoption. Study participants frequently mentioned the powerful role individuals play in resolving gaps in broadband. For example, the K-20 Network leadership was described as being able to get the job done and demonstrate the value of furthering broadband to rural schools in the State. Others mentioned one of the provider's general managers and cited his willingness to think outside of the box to expand broadband within his territory. The energy of forward thinking people that can help create rationales and have a resolve to close the broadband gap is essential to bringing more broadband options to the unserved and underserved.

Once critical factors were identified concerning broadband availability, adoption, and use within the five counties subject to the Broadband Study, CBG evaluated broadband infrastructure and service deployment models and options. We did so in order to develop recommendations for initiatives that could enhance the broadband service environment within the five counties studied and, where possible, address similar circumstances statewide.

The following steps to promote expansion of broadband availability in the five counties crystallize the gaps and the actions required to address them:

Gap	Future Actions
Lack of Broadband	Initially work to determine the most effective methods to enhance and expand backbone infrastructure.
Address Governmental Policies in Place Today that Inhibit Deployment	Work with the State, county and other local governments to address existing inhibitors to local deployment of broadband.
Lack of Backbone Infrastructure	Work with State agencies such as DOT, WSP and DIS and local agencies to fully identify all currently available infrastructure.
	Work with State agencies such as DOT, WSP and DIS and local agencies to determine planned deployment of infrastructure in the near and long term.

Gap

Future Actions

Work with State agencies such as DOT, WSP and DIS and local agencies to determine how new deployment can be leveraged to add additional capacity for broadband deployment long term, including the closest points of connection to existing and potential new last mile infrastructure.

Meet with large and small providers to determine desire to participate in, for example, a “Backbone Deployment Cooperative”.

Determine how this Cooperative might help the State reduce its costs to deploy fiber optic infrastructure throughout the counties and therefore accelerate deployment.

Creation of Redundant Backbone

Determine what level of redundancy is needed to offer reliable service and to promote adoption of the backbone network by small and large providers.

Determine how cooperative efforts will minimize deployment costs of a backbone and therefore how redundancy can be built into the network at the lowest possible level.

Creation of Additional Last Mile Infrastructure

Determine the best methods of delivering last mile services based on the closest point of connection to an enhanced, expanded backbone.

The Broadband Study Report explores several deployment models and options to facilitate the actions needed. All of these will ultimately require vigorous consideration of the difficult policy decisions to be made by the Legislature concerning the best approach or mixture of approaches that may be taken:

- **Encourage the Private Sector to Build** – The State is already involved in this type of effort through an extensive backbone network that facilitates private investment in facilities supporting governmental agency interconnection and the K-20 Network. The State could expand its role as an anchor tenant by taking steps to expand the backbone into at least one location in all counties. Establishing this objective affirmatively as a matter of State policy could potentially spur investment by entities looking for opportunities to provide not only backbone service, but to stimulate or expand broadband

infrastructure in unserved or underserved areas that happen to be contiguous to or near the backbone. Any expansion of the K-20 Network to accomplish this recommendation would require a thorough review of the terms and conditions of existing federal funding used (i.e., the federal e-rate program) in support of the network.

Providers could also be encouraged to build new broadband infrastructure through a concept known as “ROI gap funding.” Such funding could be made available by appropriate entities such as governmental, business, consortia, etc., subject to conditions. This funding would enable providers to extend service within targeted counties and municipalities, by supplementing the typical investment that they would make to provide service, which in lower density areas is unlikely to generate an adequate return.

- **Create a State Broadband Authority** – Washington does not currently have a “one stop shop” where collective thinking to address broadband needs is available. As a result, study participants indicated that broadband stakeholders were not always aware of each others’ activities and therefore could not take advantage of synergies that might exist in the deployment of infrastructure. Some type of authority could serve as a clearinghouse for broadband initiatives. Stakeholders believed this type of centralized ability to converse with other providers could go a long way in helping to address broadband needs in the five counties. A broadband authority could, for example, identify potential wholesale opportunities for certain public entities such as Public Utility Districts (PUDs), appropriate local entities, or the State itself to provide services by leveraging private and public resources that may be currently available and that potentially could be expanded (i.e., State backbone, PUD fiber optic infrastructure, local government fiber, and wireless infrastructure). Careful study of current restrictions and parameters surrounding provision and use of public resources would need to be made to insure that current positive attributes of the broadband marketplace are not lost or impaired in any effort to expand broadband service availability. Additionally, it is important to note that, as is the case for private providers, in rural areas there would need to be careful consideration of the demand (i.e., revenue potential) for broadband services to justify the level of public investment that may be required for deployment.

- **Create a Public/Private Partnership** – Develop a truly viable public/private partnership that may include a nonprofit element, but must include measurable parameters that will benchmark and determine success of the partnership(s) over time.

All of these options, as well as details and findings from the various information gathering activities CBG undertook for the Broadband Study Report, are discussed in the specific sections that follow this Executive Summary. The Report is organized into 22 major sections and attachments which speak to specific observations about broadband service within and across the five counties subject to CBG's research.